# Complete Summary

## TITLE

Urinary tract infection: hospital admission rate.

## SOURCE(S)

AHRQ quality indicators. Guide to prevention quality indicators: hospital admission for abulatory care sensitive conditions [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jan 9. Various p. (AHRQ Pub; no. 02-R0203).

## Brief Abstract

### DESCRIPTION

This indicator assesses the number of admissions for urinary infection per 100,000 population.

### RATIONALE

Urinary tract infection is a common acute condition that can, for the most part, be treated with antibiotics in an outpatient setting. However, this condition can progress to more clinically significant infections, such as pyelonephritis, in vulnerable individuals with inadequate treatment.

Proper outpatient treatment may reduce admissions for urinary infection, and lower rates represent better quality care.

### PRIMARY CLINICAL COMPONENT

Urinary infections; hospital admission rates

### DENOMINATOR DESCRIPTION

Population in Metropolitan Statistical Area (MSA) or county

### NUMERATOR DESCRIPTION

Discharges with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) principal diagnosis code for urinary tract infection. Patients transferring from another institution, Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium), or MDC 15 (newborns and other neonates) are excluded.

## Evidence Supporting the Measure

PRIMARY MEASURE DOMAIN

Outcome

SECONDARY MEASURE DOMAIN

Access
Process

EVIDENCE SUPPORTING THE MEASURE

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

## Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Wide variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

AHRQ quality indicators. Guide to prevention quality indicators: hospital admission for abulatory care sensitive conditions [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jan 9. Various p. (AHRQ Pub; no. 02-R0203).

## State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Internal quality improvement
Quality of care research

## Application of Measure in its Current Use

CARE SETTING

Ambulatory Care
Community Health Care

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Advanced Practice Nurses
Physician Assistants
Physicians

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Counties or Cities

### TARGET POPULATION AGE

Patients of all age groups, excluding newborns and other neonates

### TARGET POPULATION GENDER

Either male or female

### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

Unspecified

### ASSOCIATION WITH VULNERABLE POPULATIONS

- Billings et al. found that low-income zip codes in New York City had 2.2 times more urinary tract infection admissions than high-income zip codes. Household income explained 28% of this variation.
- Millman et al. reported that low-income zip codes had 2.8 times more urinary tract infection hospitalizations per capita than high-income zip codes.

### EVIDENCE FOR ASSOCIATION WITH VULNERABLE POPULATIONS

Billings J, Zeital L, Lukomnik J, et al. Analysis of variation in hospital admission rates associated with area income in New York City [unpublished].

Millman M, editor(s). Access to health care in America. Committee on Monitoring Access to Personal Health Care Services. Washington (DC): National Academy Press; 1993. 240 p.

### BURDEN OF ILLNESS

Unspecified

### UTILIZATION

Unspecified

COSTS

Unspecified

## Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Timeliness

## Data Collection for the Measure

CASE FINDING

Both users and nonusers of care

DESCRIPTION OF CASE FINDING

All individuals in a Metropolitan Statistical Area (MSA) or county

DENOMINATOR SAMPLING FRAME

Geographically defined

DENOMINATOR (INDEX) EVENT

Patient Characteristic

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions
All individuals in geographic areas defined at the Metropolitan Statistical Area (MSA) level or the county level

Exclusions
Unspecified

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
Discharges with International Classification of Diseases, Ninth Revision, Clinical

Modification (ICD-9-CM) principal diagnosis code for urinary tract infection (see Appendix A of the original measure documentation for ICD-9-CM codes)

Exclusions
Patients transferring from another institution, Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium), or MDC 15 (newborns and other neonates) are excluded.

DENOMINATOR TIME WINDOW

Time window is a single point in time

NUMERATOR TIME WINDOW

Encounter or point in time

DATA SOURCE

Administrative data

LEVEL OF DETERMINATION OF QUALITY

Not Individual Case

OUTCOME TYPE

Proxy for Outcome

PRE-EXISTING INSTRUMENT USED

Unspecified

## Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a lower score

ALLOWANCE FOR PATIENT FACTORS

Analysis by subgroup (stratification on patient factors)
Risk adjustment method widely or commercially available

DESCRIPTION OF ALLOWANCE FOR PATIENT FACTORS

Observed (raw) rates may be stratified by areas (Metropolitan Statistical Areas or counties), age groups, race/ethnicity categories, and sex.

Risk adjustment of the data is recommended using age and sex.

Application of multivariate signal extraction (MSX) to smooth risk adjusted rates is also recommended.

### STANDARD OF COMPARISON

External comparison at a point in time
External comparison of time trends
Internal time comparison

## Evaluation of Measure Properties

### EXTENT OF MEASURE TESTING

Each potential quality indicator was evaluated against the following six criteria, which were considered essential for determining the reliability and validity of a quality indicator: face validity, precision, minimum bias, construct validity, fosters real quality improvement, and application. The project team searched Medline for articles relating to each of these six areas of evaluation. Additionally, extensive empirical testing of all potential indicators was conducted using the 1995-97 Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID) and Nationwide Inpatient Sample (NIS) to determine precision, bias, and construct validity. Table 1 in the original measure documentation summarizes the results of the literature review and empirical evaluations on the Prevention Quality Indicators. Refer to the original measure documentation for details.

### EVIDENCE FOR RELIABILITY/VALIDITY TESTING

AHRQ quality indicators. Guide to prevention quality indicators: hospital admission for abulatory care sensitive conditions [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jan 9. Various p. (AHRQ Pub; no. 02-R0203).

## Identifying Information

### ORIGINAL TITLE

Urinary tract infection admission rate.

### MEASURE COLLECTION

Agency for Healthcare Research and Quality (AHRQ) Quality Indicators

### MEASURE SET NAME

Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators

## DEVELOPER

Agency for Healthcare Research and Quality

## ADAPTATION

This indicator was originally developed by Billings and colleagues in conjunction with the United Hospital Fund of New York.

## PARENT MEASURE

Unspecified

## RELEASE DATE

2001 Oct

## REVISION DATE

2004 Jan

## MEASURE STATUS

This is the current release of the measure.

## SOURCE(S)

AHRQ quality indicators. Guide to prevention quality indicators: hospital admission for abulatory care sensitive conditions [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jan 9. Various p. (AHRQ Pub; no. 02-R0203).

## MEASURE AVAILABILITY

The individual measure, "Urinary Tract Infection Admission Rate," is published in "AHRQ Quality Indicators. Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Sensitive Conditions." This document is available in Portable Document Format (PDF) and a zipped WordPerfect(R) file from the Quality Indicators page at the Agency for Healthcare Research and Quality (AHRQ) Web site.

## COMPANION DOCUMENTS

The following are available:

- "AHRQ Prevention Quality Indicators Software (Version 2.1 Revision 3)" (Rockville, [MD]: AHRQ, 2004 Jan 9) and its accompanying documentation can be downloaded from the Agency for Healthcare Research and Quality (AHRQ) Web site. (The software is available in both SAS- and SPSS-compatible formats.)

- "HCUPnet, Healthcare Cost and Utilization Project" [internet]. (Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 [Various pagings]). HCUPnet is available from the AHRQ Web site.
- "Refinement of the HCUP Quality Indicators" (Rockville [MD]: AHRQ, 2001 May. Various pagings. [Technical review; no. 4]; AHRQ Publication No. 01-0035). This document was prepared by the UCSF-Stanford Evidence-based Practice Center for AHRQ and can be downloaded from the AHRQ Web site.

## NQMC STATUS

This NQMC summary was completed by ECRI on December 19, 2002. The information was verified by the Agency for Healthcare Research and Quality on January 9, 2003. This NQMC summary was updated by ECRI on April 6, 2004.

## COPYRIGHT STATEMENT



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